Amendments to the Claims:

Please amend claims 1, 2 and 11 as set forth below in the listing of claims. This listing of claims will replace all prior versions, and listings of claims in the application.

Listing of Claims:

1. (Currently amended) A laser surgery system for treating a tissue located at a site of an eye, the system comprising:

a laser making a beam of a treatment light energy, the treatment light energy comprising corneal ablation light energy deliverable to the site so as to effect reshaping of a corneal tissue at the site;

an imaging system projecting ~~forming~~ an image of a natural tissue structure, the natural tissue structure being in proximity to the site, the image of the site being visible to the user and indicating an X-Y position of the natural tissue structure along X and Y directions transverse to the beam;

a light detector having the image of the structure ~~formed~~ projected thereon and generating a first electrical signal in response to the image of the structure, the first signal being related to ~~a~~ the X-Y position of the structure; and

a processor adapted to generate a second electrical signal in response to the first electrical signal, the second signal stabilizing the beam of treatment light energy delivered to the tissue treatment site in the X and Y directions as the light energy is delivered to the tissue treatment site.

2. (Currently amended) The system of claim 1 wherein the imaging system ~~forms~~projects a real time image of the tissue treatment site, and the second signal stabilizes the real time image of the tissue treatment site as seen by the user.

3. (Previously presented) The system of claim 1 wherein the structure corresponds to a limbal structure of the eye, and wherein the detector generates the first electrical signal in response to the image of the limbal structure.

4. (Original) The system of claim 1 wherein at least one processor comprises a computer program adapted to control a delivery of the light energy to the tissue treatment site in response to at least one action of the user.

5. (Original) The system of claim 1 wherein the processor comprises a central processing unit and a computer program adapted to determine the position of the structure.

6. (Original) The system of claim 1 wherein the processor comprises an analog circuit measuring a position of the structure.

7. (Original) The system of claim 2 further comprising a display visible to the user, the display showing the stabilized real time image of the site.

8. (Original) The system of claim 7 wherein the image of the site is formed on a camera, the camera being electronically coupled to the display.

9. (Original) The system of claim 1 wherein the optical system further comprises a movable mirror, and the movable mirror moves in response to the second signal.

10. (Original) The system of claim 1 further comprising:

optical path means for receiving the laser beam, for aiming the beam at a position in X-Y directions transverse to the beam, and for focusing the beam at a distance in a Z direction as desired toward the tissue treatment site;

beam steering means connected to the optical path means for controlling the position at which the beam is aimed in X-Y directions;

beam focusing means connected to the optical path means for controlling the distance at which the laser beam is focused;

tracking means for tracking eye movements during the progress of the surgery, including X-Y tracking means for tracking the structure of the eye in X and Y directions, and Z tracking means for tracking movements of the eye in the Z direction toward and away from the system; and

safety interrupt means for interrupting delivery of the laser beam to the patient when it is determined that the tracking means has lost the structure being tracked.

11. (Currently amended) A method of treating a tissue located at a site of an eye of a patient with a laser, the tissue treatment site being seen by a user, the method comprising:

making a beam of a corneal reshaping treatment light energy with the laser, the treatment light energy being deliverable to the tissue treatment site so as to treat a cornea;

projecting~~forming~~ a real-time image of the tissue treatment site and an image of a natural tissue structure with an optical system, the natural tissue structure being in proximity to the tissue treatment site;

measuring [[a]]an X-Y position of the tissue structure from a first electrical signal generated by a detector in response to the image, the detector having the image of the structure ~~formed~~ projected thereon, the first signal being related to the position of the structure along X and Y directions transverse to the beam;

generating a second electrical signal in response to the measured position of the structure, the second signal stabilizing the beam of treatment light energy in the X and Y directions as the treatment light energy is delivered to the tissue treatment site; and

transmitting the stabilized beam of treatment light energy to the tissue treatment site so as to alter refraction of the cornea.

12. (Original) The method of claim 11 further comprising stabilizing a real time image of the tissue treatment site as seen by the user while the treatment light energy is delivered to the tissue treatment site.

13 . (Original) The method of claim 12 further comprising moving a mirror in response to the second signal to stabilize the real-time image of the site as seen by the user.

14. (Previously presented) The method of claim 11 further comprising ablating a surface of the cornea of the eye by pulsing the laser.

15. (Original) The method of claim 11 further comprising:

receiving the beam with an optical delivery system;

aiming the beam at a position in X-Y directions transverse to the beam with the optical delivery system, the optical delivery system comprising a beam steering optic;

focusing the beam in a Z direction at a distance with the optical delivery system, the optical delivery system comprising a front lens element;

controlling the position at which the beam is aimed in X-Y directions using the beam steering optic of the optical delivery system;

controlling the distance at which the laser beam is focused in the Z direction with the beam focusing optic of the optical delivery system;

tracking eye movements of the patient during the progress of the surgery by tracking eye movements in X and Y directions with the detector and by tracking eye movements in a Z direction with a second optical detector;

automatically shifting the beam steering optic and the beam focusing optic with a processor as the eye is tracked through X, Y and Z directions to change the position of the laser beam and the distance at which the laser beam is focused so as to follow movements of the eye; and

automatically interrupting delivery of the laser beam to the tissue treatment site when it is determined via the processor that the sensor has lost the structure being tracked.